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Phytophthora castaneae, the correct name for *P. katsurae* nom. nov. superfl.

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Abstract — *Phytophthora katsurae* was proposed as a nom. nov. for *P. castaneae* on the assumption that the replaced name was an illegitimate later homonym. This assumption was based on the invalid nomen nudum publication of "*Phytophthora castaneae*" in a host–pathogen index as a synonym of *Mycelophagus castaneae*, and an erroneous interpretation of Clements & Shear's listing of the type of the genus *Mycelophagus*. There is no valid earlier homonym. *Phytophthora castaneae* is the correct legitimate name for the taxon causing trunk rot of *Castanea crenata*, and *P. katsurae* is an illegitimate superfluous name.

Key words — chestnut disease, ink disease, nomenclature, taxonomy

Introduction

In 1976, Katsura & Uchida described a new *Phytophthora* species, *P. castaneae*, causing trunk rot of *Castanea crenata* in Japan (Katsura 1976). Subsequently, Ko & Chang (1979) claimed that *P. castaneae* was an illegitimate later homonym, and published a replacement name, *P. katsurae*, which has been used uncritically in taxonomic and phytopathological literature since that time (Ko & Arakawa 1980, Ho 1981, Ooka & Uchida 1984, Stamps 1985, Chang & Shu 1988, Liyanage & Wheeler 1989, Stamps et al. 1990, Oudemans & Coffey 1991, Uchida et al. 1992, Erwin & Ribeiro 1996, Elliott et al. 2004, Ristaino 2011). In this paper, I survey the relevant literature and demonstrate that Ko & Chang were mistaken — there is no earlier homonym and the correct name for this taxon is the legitimate original name, *P. castaneae*.

Ko & Chang's major error

Ko & Chang (1979: 841) presented a plausible case for the illegitimacy of *P. castaneae* Katsura & K. Uchida as a later homonym, but the basis of their case was the assumption that "The name of the type species [of *Mycelophagus*] was

consequently changed to *Phytophthora castaneae* (Mangin) Clements et Shear (7)." The referral of this citation to their LITERATURE CITED (7) [= MacFarlane (1968)] is puzzling, since MacFarlane (1968: 683) used the name "*Phytophthora castaneae*" in a host–pathogen index as a nomen nudum cross-reference to *Mycelophagus castaneae*, with no mention of Clements & Shear, or any other nomenclatural author. Moreover, Ko & Chang's attribution of the combination to Clements & Shear is a misreading or misunderstanding of Clements & Shear (1931: 241), where a list of synonyms of *Phytophthora* includes the monotypic genus *Mycelophagus* L. Mangin (Mangin 1903), with its type listed as "*M. castaneae* Mang." Clements & Shear did not make an explicit combination of the epithet in *Phytophthora*; and their citation of "*M. castaneae*" does not constitute a definite association of the epithet with the genus name *Phytophthora* or its abbreviation, as required for a valid combination (McNeill et al. 2006: Art. 33.1). The combination "*Phytophthora castaneae* (Mangin) Clements et Shear" is neither illegitimate (as Ko & Chang 1979 asserted, without explanation) nor invalid — it is non-existent!

The correct nomenclature

Phytophthora castaneae Katsura & K. Uchida, Trans. Mycol. Soc. Japan 17: 241. 1976.
≡ *Phytophthora katsurae* W.H. Ko & H.S. Chang, Mycologia 71: 841. 1979, nom. nov., nom. illegit. [superfluous].

In the absence of any earlier homonym, the name *P. castaneae* Katsura & K. Uchida is legitimate and the earliest available name for the taxon. Consequently, the nomen novum *P. katsurae* proposed by Ko & Chang (1979) is superfluous and therefore illegitimate (McNeill 2006: Art. 52.1).

Very few publications have avoided Ko & Chang's error and its erroneous nomenclatural consequences. Uchida (1976) and Newhook et al. (1978: 7) both presented the taxon as *P. castaneae*, but this predated the 1979 publication of *P. katsurae*. Index of Fungi 4(20): 514. 1980 recognised (in entries for *P. castaneae* and *P. katsurae*) that the *Phytophthora* combination based on *M. castaneae* was not proposed in Clements & Shear (1931), and stated that it was first proposed by MacFarlane (1968: 683) as an invalid combination lacking any reference to the author and place of publication of the basionym (McNeill et al. 2006: Art. 33.4). Miyata & Odagiri (1982a,b) used the name *P. castaneae,* and Dick (2001: 498, 499) listed *P. katsurae* as a synonym, cross-referenced to the main entry of *P. castaneae* [misspelt and misattributed as "*P. castanae* [sic] Katsura & S. [sic] Uchida"]. Index of Fungi 6(16): 868. 1998 listed *P. katsurae* as a superfluous synonym of *P. castaneae*.

The taxonomy and nomenclature of *Mycelophagus castaneae*

Mycelophagus castaneae L. Mangin, C.R. Hebd. Séanc. Acad. Sci., Paris 136: 472. 1903.

"*Phytophthora castaneae*" H.H. MacFarl., Rev. App. Mycol., Pl. Host–Path. Index vv. 1–40 (1922–61): 683. 1968, nom. inval. [no basionym author and reference].

"*Phytophthora castaneae*" W.H. Ko & H.S. Chang, Mycologia 71: 841. 1979, nom. inval. [accepted only as an illegitimate synonym of *M. castaneae*].

The French protologue of *M. castaneae* was reproduced and translated into English in Waterhouse (1970: 54–55) under the heading "Names not taken into *Phytophthora*." Waterhouse (1963: 18) concluded that the genus and species were "most probably *Phytophthora* sp. but impossible to tell from the description." Although its association with "ink disease of chestnut" in Europe (Blin 1922, Schell 1922, Waterhouse 1963) might suggest a possible relationship with either *P. cambivora* or *P. cinnamomi* (Erwin & Ribeiro 1996: 260, Vannini & Vettraino 2001, Vettraino et al. 2005), it is preferable to accept Waterhouse's expert opinion that *Mycelophagus castaneae* should be treated as a name of dubious application.

Index of Fungi 6(16): 868. 1998 interpreted the publication by Ko & Chang (1979) of the fictitious combination "*Phytophthora castaneae* (Mangin) Clements et Shear" as constituting an unintentional but valid combination by Ko & Chang, which would be an illegitimate later homonym of *P. castaneae* Katsura & K. Uchida. The Ko & Chang paper certainly appears to contain all the elements required for a valid comb. nov., although the full and direct basionym reference is made via a LITERATURE CITED reference, contrary to an ICBN recommendation (McNeill et al. 2006: Rec. 33A.1). However, Ko & Chang explicitly accepted the binomial only as an illegitimate synonym of *Mycelophagus castaneae*, which invalidates any putative new combination (McNeill et al. 2006: Art. 34.1(c)).

In a further concatenation of misinformation, Ristaino (2011) stated that *P. katsurae* was "a replacement name for *P. castaneae* (L. Mangin) Clements & Shear (1931) and for *P. castaneae* Katsura & Uchida (1976), which are both considered illegitimate names." Neither Ko & Chang (1979) nor any other author has ever suggested any taxonomic connection between Mangin's and Katsura & Ushida's species, the putative Clements & Shear combination is non-existent, and *P. castaneae* Katsura & K. Uchida is a legitimate name.

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